

**Claims:**

1           1.     A method of operating a base station to wirelessly transmit voice or  
2 streaming communications and data communications to a plurality of user terminals on a  
3 carrier, the method comprising:

4                 repeatedly and sequentially wirelessly transmitting time division multiplexed  
5 superframes to the plurality of user terminals on the carrier, wherein each time division  
6 multiplexed superframe comprises a plurality of frames, wherein at least one of the frames  
7 carries voice communications, and wherein at least one of the frames carries data  
8 communications;

9                 for each frame carrying voice communications, transmitting a plurality of voice  
10 packets contained in the frame;

11                 wherein each voice packet includes voice bits for a respective user; and

12                 wherein each voice packet includes a preamble having a user identifier and an  
13 indication of the length of the voice packet.

1           2.     The method of claim 1, wherein at least one Walsh function is employed to  
2 identify the user and to indicate the length of a voice packet.

1           3.     The method of claim 2, wherein a single Walsh function both identifies the  
2 respective user and indicates the length of the voice packet.

1           4.     The method of claim 2, wherein:  
2 a first unique Walsh function of the preamble identifies the user; and  
3 a second unique Walsh function of the preamble indicates the length of voice packet.

1           5.     The method of claim 4, wherein:  
2           the first unique Walsh function is modulated on the carrier during a first time period  
3 of the preamble; and  
4           the second unique Walsh function is modulated on the carrier during a second time  
5 period of the preamble.

1           6.     The method of claim 5, wherein both the first unique Walsh function and the  
2 second unique Walsh function are modulated on an in-phase portion of the carrier.

1           7.     The method of claim 3, wherein:  
2           the first unique Walsh function is modulated on an in-phase portion of the carrier;  
3 and  
4           the second unique Walsh function is modulated on the quadrature-phase portion of  
5 the carrier.

1           8.     The method of claim 7, wherein the first unique Walsh function and the  
2 second unique Walsh function are concurrently modulated on the carrier.

1           9.     The method of claim 1, wherein at least one voice packet also includes a  
2 pointer to a subsequent voice packet.

1           10.    The method of claim 9, wherein at least one Walsh function is employed to  
2 identify the user and to indicate the length of a voice packet.

1           11. A superframe embodied on a carrier that carries voice or streaming  
2 communications and data communications intended for a plurality of user terminals, the  
3 superframe comprising:

4           a plurality of frames, wherein at least one of the frames carries voice  
5 communications, and wherein at least one of the frames carries data communications;

6           for each frame carrying voice communications, a plurality of voice packets contained  
7 in the frame;

8           wherein each voice packet includes voice bits for a respective user; and

9           wherein each voice packet includes a preamble having a user identifier and an  
10 indication of the length of the voice packet.

1           12. The superframe of claim 11, wherein at least one Walsh function is employed  
2 to identify the user and to indicate the length of a voice packet.

1           13. The superframe of claim 12, wherein a single Walsh function both identifies  
2 the respective user and indicates the length of the voice packet.

1           14. The superframe of claim 12, wherein:  
2 a first unique Walsh function of the preamble identifies the user; and  
3 a second unique Walsh function of the preamble indicates the length of voice packet.

1           15. The superframe of claim 14, wherein:  
2 the first unique Walsh function is modulated on the carrier during a first time period  
3 of the preamble; and  
4 the second unique Walsh function is modulated on the carrier during a second time

5 period of the preamble.

1 16. The superframe of claim 15, wherein both the first unique Walsh function  
2 and the second unique Walsh function are modulated on an in-phase portion of the carrier.

1 17. The superframe of claim 14, wherein:  
2 the first unique Walsh function is modulated on an in-phase portion of the carrier;  
3 and  
4 the second unique Walsh function is modulated on the quadrature-phase portion of  
5 the carrier.

1 18. The superframe of claim 17, wherein the first unique Walsh function and the  
2 second unique Walsh function are concurrently modulated on the carrier.

1 19. The method of claim 11, wherein at least one voice packet also includes a  
2 pointer to a subsequent voice packet.

1 20. The method of claim 19, wherein at least one Walsh function is employed to  
2 identify the user and to indicate the length of a voice packet.